

Draft Guidance on Contained-In/Contained-Out Determinations for Management of Hazardous Waste Remedial Projects in Utah

Division of Waste Management and Radiation Control
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FIGURE 1: Contained-In/Contained-Out Determination Process

Contained-In/Contained-Out Determination Application

Application for Project Oversight

1.0 INTRODUCTION:

The U.S. Environmental Protection Agency (EPA) has delegated the authority to regulate hazardous wastes pursuant to the Resource Conservation and Recovery Act (RCRA) in the State of Utah to the Utah Division of Waste Management and Radiation Control (DWMRC).

The purpose of this guidance document is to assist in the determination of whether contaminated soils, impacted by hazardous materials or wastes, must be managed as a hazardous waste subject to RCRA requirements, such as disposal at a permitted hazardous waste landfill. There may be instances where impacted soils may not be regulated as hazardous waste for purposes of a more cost-effective landfill disposal alternative. This document is intended to help guide the user through the process in requesting that the DWMRC make such a decision referred to herein as either a "Contained-In" or a "Contained-Out" determination.

It is noted that EPA's Contained-In/Contained-Out policy is not codified in federal regulation or by state administrative rule, except for the publication of the policy in the *Federal Register* (63 FR 65877 November 30, 1998) and several other releases from EPA. The DWMRC will evaluate the contaminated soil on a site-specific basis to determine compliance with applicable rules. As guidance, the guidelines provided in this document do not create any substantive or procedural rights related to a site-specific determination. In addition, all determinations are made on a case-by-case basis and these guidelines do not replace the requirements for a site-specific Contained-In/Contained-Out determination by the DWMRC for the impacted soils in question.

These guidelines identify the applicable management, storage, treatment and disposal regulatory options and requirements associated with excavated soils from a contaminated site subject to RCRA regulatory requirements for hazardous waste(s). It is important to note that soils contaminated with hazardous waste(s) are the only impacted media that are addressed by this guidance document. All other impacted media, such as groundwater, surface water, sediments, debris, etc. should be addressed separately on a site-specific basis. In addition, these guidelines are only applicable to remedial or corrective action projects in the state of Utah and do not apply to soils generated out of state and transported to Utah for disposal.

2.0 APPLICABILITY TO CONTAMINATED SOILS:

It should be made clear that soils contaminated with hazardous wastes are not considered solid wastes in the sense of being abandoned, recycled, or inherently waste-like as defined in federal RCRA regulations and Utah's corresponding administrative rules. However, environmental media, such as contaminated soils, that contain a listed hazardous waste or exhibit a hazardous waste characteristic must be managed as hazardous wastes.

2.1 When is Contaminated Soil Considered to Contain a Hazardous Waste?

Soil is considered to contain (e.g., "Contained-In") a hazardous waste under RCRA and the Utah Hazardous Waste Regulations as outlined in <u>Utah Admin. Code</u> R315-261 if, when it is *generated*, meets either or both of the following conditions:

- 1. The soil exhibits one or more of the characteristics of a hazardous waste; toxicity, reactivity, ignitability, or corrosivity; and/or,
- 2. The soil contains hazardous constituents from a listed hazardous waste (F, K, P or U classes).

Soils contaminated with hazardous wastes (listed or characteristic) need to be managed according to all applicable federal regulations and state rules. Additional guidance and clarification on the applicable regulations can be found in <u>Utah Admin. Code</u> R315-268 for the proper management of soils described below.

Soils contaminated with characteristic hazardous waste:

Impacted soils are considered to contain a hazardous waste if they continue to exhibit a characteristic of hazardous waste. Once the contaminated soil is treated using an acceptable method and no longer exhibits a hazardous characteristic (e.g., toxicity, reactivity, ignitability or corrosivity), then the soils are considered non-hazardous, or in other words "contained out".

However, if the soils are treated to remove the characteristic (as listed above), they still may be subject to land disposal restrictions even though they may meet a Contained-In/Contained-Out determination by the DWMRC. Specifically, it is EPA's position (US EPA, 2001) that even contaminated soils that have been decharacterized as hazardous waste, and have obtained a Contained-Out determination by a regulatory agency, that the soils may still remain subject to LDR treatment standards since the soils may still contain some hazardous constituents at detectable concentrations.

Soils contaminated with listed hazardous waste:

Soils that contain listed hazardous waste must be managed as hazardous wastes for as long as they contain hazardous constituents from the listed hazardous waste. However, it is possible for soils that are contaminated with a listed hazardous waste to be considered as non-hazardous waste under certain conditions. This scenario is possible, **if** the contaminant levels of the listed hazardous waste(s) are at or below certain risk-based concentrations considered to be protective of human health and the environment as determined on a site-specific basis by the DWMRC.

If the DWMRC decides that any given volume of contaminated soil does not contain or no longer contains a hazardous waste, then it is considered a Contained-Out determination. Such a determination has obvious cost-effective benefits such as the contaminated soil being able to be handled, stored, transported, and ultimately disposed of as non-hazardous wastes at a permitted RCRA Subtitle D solid waste disposal facility or landfill.

2.2 How Can Soils Contaminated with Hazardous Waste(s) be Considered Non-Hazardous?

Soil that would be considered to contain a hazardous waste can become (or be considered) non-hazardous under certain conditions, depending upon the factors that originally would make it a hazardous waste.

In the first case described above in Section 2.1, (e.g., when the soil contains a <u>characteristic</u> hazardous waste), the soil ceases to be a hazardous waste when it is treated and no longer exhibits a characteristic of a hazardous waste.

In the second case outlined above in Section 2.1 (e.g., when the soil contains a <u>listed</u> hazardous waste), the soil is no longer considered a hazardous waste when a site-specific determination concludes that the soil does not contain the hazardous constituents for which the waste was listed at concentrations that required it to be regulated as a hazardous waste.

2.3 When is Contaminated Soil Considered to be Generated?

Soil is considered generated for purposes of land disposal restrictions (LDR) when it is excavated and subsequently accumulated or placed in containers (tanks, drums, roll-offs, etc.), or other RCRA regulated units, treated ex-situ, or removed from the on-site "source" area (also known as the Area of Contamination or AOC).

LDR treatment standards do not apply to in-situ soils left in-place, nor do they force the impacted soils to be excavated. As an example: If the contaminated soil is re-graded and/or consolidated within an on-site AOC, the soil would not be considered generated, and the LDR requirements do not apply. As long as excavated soils are not treated *ex-situ* and/or not placed into containers, tanks, or another RCRA-regulated unit, or moved outside of the AOC, they will not be considered generated for purposes of having to meet LDR requirements.

3.0 LAND DISPOSAL RESTRICTIONS:

Contaminated soils which contain hazardous waste upon generation (removed from place or excavated) are subject to all applicable RCRA Subtitle C hazardous waste management, storage, treatment, and disposal requirements. In addition, such waste must meet the LDR requirements outlined in Utah Admin. Code R315-268 before being disposed of in an appropriate landfill. LDR treatment standards do not apply to soils left in-place ("in-situ"), nor do LDR standards require that impacted soils be excavated and removed from the site.

3.1 Do Land Disposal Restrictions (LDR) Apply at My Site?

The EPA has stated in Title 40, Part 268 of The Code of Federal Regulations, (40 CFR 268) that soil is generally subject to the RCRA Land Disposal Restrictions (LDR) program including the LDR treatment standards, if the following conditions are met as outlined in 40 CFR Sections 261 and 268 (and as set forth in the corresponding Utah rules, Utah Admin. Code R315 Rules 261 and 268):

- the soil is generated; *and*,
- the soil contains a hazardous waste regulated under RCRA.

3.2 LDR Treatment Standard Requirements in Relation to Contained-In/Contained-Out Determinations

A major consideration associated with the Contained-In/Contained-Out policy is that the policy does not carry an automatic exclusion from the LDR requirements. The LDRs apply to the soil if the soil contained a hazardous waste at the time of generation. In other words, LDR treatment requirements apply even if the soil is determined to no longer contain a hazardous waste or it is being described as "Contained-Out". Applicability of LDR treatment standards to soil containing any hazardous waste must be made before off-site disposal at an appropriate landfill. Ultimately the determination for the applicability of LDR treatment requirements for the contaminated soils is the responsibility of the disposal facility accepting the wastes (hazardous or non-hazardous).

4.0 CRITERIA FOR CONTAINED-IN/CONTAINED-OUT DETERMINATIONS:

In making a Contained-In/Contained-Out determination, the DWMRC evaluates the site-specific soil contaminant levels, which if determined to fall below applicable risk-based concentration levels, are then considered by the DWMRC to meet the "contained out" criteria or considered to no longer contain hazardous waste(s) above those threshold screening levels.

4.1 Criteria and Conditions for Making Contained-In/Contained-Out Determinations

The DWMRC uses EPA's Regional Screening Level (RSL) tables tabulated for the Industrial and/or Commercial Land Use Scenario and a cancer risk of $1x10^{-6}$ and a hazard index of one as reference for making a Contained-In/Contained-Out determination of soil containing listed waste. Use of the EPA's RSL tables provide for the protection of the industrial worker or landfill worker who may come into contact with the impacted soils at a later time.

There are two basic options available to an applicant seeking a Contained-In/Contained-Out determination by the DWMRC as described in more detail below:

4.2 Option 1 for Hazardous Wastes

Soils must be managed as hazardous waste under RCRA Subtitle C Regulations when the soils:

- potentially are contaminated with a listed hazardous waste under <u>Utah Admin. Code</u> R315-261 (listed waste);¹
- exhibit any of the characteristics of a hazardous waste;²
- have a concentration of any Hazardous Constituent of Concern (HCOC) listed under <u>Utah Admin.</u> <u>Code</u> R315-261-33,³ and <u>Utah Admin. Code</u> R315-261-1092, Appendix VIII⁴ which are more than:
 - the current US EPA Regional Screening Level (RSL) Table;
 - o Industrial Risk-Based Screening Level (RBSL) at a cancer risk of 1x10⁻⁶; and,
 - a non-cancer hazard index of one for direct exposure (ingestion, inhalation, and dermal exposure) to the contaminated soil(s).

Data for soils containing a concentration of any HCOC at levels above applicable regulatory limits as outlined herein must be obtained through representative sampling and analysis and reported as the 95% upper confidence limit (95% UCL). If the required number of samples for determination of a 95% UCL is not adequate, the maximum concentration shall be used for reporting.

Contaminated soils managed under RCRA Subtitle C, where the soil is determined to "contain" listed hazardous waste or which exhibits a characteristic of hazardous waste at the time of generation (removal, excavated), must also meet all applicable LDR requirements established for soils in Utah Admin. Code R315-268-49, R315-268-48 and R315-268-49⁵, and disposed of at a permitted RCRA Subtitle C landfill.

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¹ Corresponding federal regulation, 40 CFR Part 261, Subpart D (listed waste).

² See <u>Utah Admin. Code</u> R315-261; 40 CFR Part 261.

³ Corresponding federal regulation 40 CFR Part 261.33.

⁴ Corresponding federal regulation 40 CFR Part 261, Appendix VIII "adopted and incorporated by reference with the following addition: (a) P999 – CX, GA, GB, GD, H, HD, HL, HN-1, HN-2, HN-3, HT, L, T, and VX."

⁵ Corresponding federal regulations 40 CFR Parts 268.40, 268.48 and 268.49.

4.3 Option 2 for Non-Hazardous Wastes

Soils may be managed as a non-hazardous waste under RCRA Subtitle D Regulations when the soils are:

- determined to not exhibit any of the characteristics of a hazardous waste;
- determined to be contaminated with a listed hazardous waste under <u>Utah Admin. Code</u> R315-261,⁶
 but it is demonstrated that the levels or concentrations of all applicable hazardous constituents (<u>Utah Admin. Code</u> R315-261-33 and R315-261-1092, Appendix VIII)⁷ in the soil(s) are:
 - o less than or equal to the current US EPA RSL Table;
 - o less than or equal to the industrial RBCLs at a cancer risk of 1x10⁻⁶; and,
 - o shown to have a non-carcinogenic hazard index equal to or less than one for direct exposure to soil.

If and when the conditions described above are met, <u>and upon meeting any applicable LDR treatment</u> <u>standards requirements</u>, the soil(s) may be managed and disposed of in a permitted, lined RCRA Subtitle D solid waste landfill with the approval of the receiving landfill facility.

Soils under this second option are eligible for a Contained-Out determination and may be subject to LDR requirements as a component part of the Contained-Out determination. The determination is subject to approval by the DWMRC. Applicable LDR requirements can be found in <u>Utah Admin. Code</u> R315-268-40, R315-268-48, and R315-268-49, 8 for the following scenarios:

- If the soil is a characteristic hazardous waste at the time of removal, even if the characteristic is removed because of treatment, the soil must also meet LDR requirements for all underlying HCOCs before proper disposal.
- If the soil was contaminated as a result of a listed waste, and the listed waste was subject to LDR requirements at the time of release, then the excavated soil must meet LDR requirements even if the soil does not contain a hazardous waste (e.g., Contained-Out).
- For treatment standards, generators may choose between meeting the Universal Treatment Standard (UTS) for the HCOC,⁹ or in situations where the UTSs are exceeded, opt to use the Alternative Treatment Standards (ATS).¹⁰ To meet the ATS, all underlying hazardous constituents must be treated to reduce hazardous constituent concentrations levels by ninety percent (90%), or treated to achieve hazardous constituent concentrations that are less than ten times the UTS (10x UTS), whichever is greater.
- All contaminated soil subject to the LDR requirements, may also qualify for treatment variance if it
 is established that a nationally applicable treatment standard is unachievable or is not appropriate.
 A site-specific LDR treatment standard may be established on a case-by-case basis.
- Under <u>Utah Admin. Code</u> R315-268-44(h)(3),¹¹ variance from otherwise applicable LDR treatment standard may be approved if it is determined that compliance with the treatment standard would

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⁶ Corresponding federal regulation 40 CFR Part 261, Subpart D.

⁷ Corresponding federal regulations 40 CFR Part 261.33 and Part 261, Appendix VIII with the following addition: (a) P999 – CX, GA, GB, GD, H, HD, HL, HN-1, HN-2, HN-3, HT, L, T, and VX."

⁸ Corresponding federal regulations 40 CFR Parts 268.40, 268.48, and 268.49.

⁹ <u>Utah Admin. Code</u> R315-268-48 and corresponding federal regulation 40 CFR Part 268.48.

¹⁰ Utah Admin. Code R315-268-49 and corresponding federal regulation 40 CFR Part 268.49.

¹¹ Corresponding federal regulation 40 CFR Part 268.44(h)(3).

result in treatment beyond the point at which short-term or long-term threats to human health and the environment are minimized. This allows a site-specific risk-based determination to supersede the technology-based LDR treatment standard under such circumstances.

- Alternative LDR treatment standards established through site-specific risk-based concentrations minimize the threat to human health and the environment. In requesting alternative LDR treatment standards, applicants must demonstrate to the DWMRC that the concentrations for the contaminants of concern are within acceptable ranges that meet applicable risk-based cleanup levels. That is, for carcinogens, alternative treatment standards should ensure constituent concentrations result in the total excess risk to an individual exposed over a lifetime to generally be within a risk range from 1x10⁻⁴ to 1x10⁻⁶, using 1x10⁻⁶ as a point of departure for being at an acceptable excess risk level and not needing any additional work or cleanup action(s) for the soils in question.
- Applicants must demonstrate risk values closer to the more protective end of the risk range of 1x10⁻⁶. For non-carcinogenic effects, alternative treatment standards should ensure constituent concentrations that an individual could be exposed to daily, without appreciable risk of deleterious effect during a lifetime. In general, the hazard index should not exceed one. Constituent concentrations that achieve these levels should be calculated based on a reasonable maximum exposure scenario. That is, it should be based on an analysis of both the current and reasonable expected future land uses, with exposure parameters chosen based on a reasonable assessment of the maximum exposure that might occur. However, alternative LDR treatment standards may not be based on considerations of post-land disposal controls such as protective covers/caps or other barriers.
- If the DWMRC determined that any given volume of impacted soils did not contain or no longer contains any hazardous waste if concentrations of hazardous constituents fall below background levels or are at non-detectable concentrations, then, this determination would effectively terminate all RCRA Subtitle C landfill disposal requirements, including LDRs.

5.0 DOCUMENTATION NEEDED FOR DETERMINATION REQUESTS:

Any request for the DWMRC to review and, if approved, to make a Contained-In/Contained-Out determination must contain (at a minimum) the following information:

- Name and address of the facility, and EPA ID number if one has been assigned to the site;
- Proposed quantity of the soils to be managed and disposed of;
- Proposed disposal location for the transfer of the soils, if approved by the DWMRC;
- Documentation that the on-site soils have been adequately characterized by representative sampling; this includes the identification, segregation, and sampling of "hot spots" and quantification of the soil volume subject to this Contained-In/Contained-Out determination;
- Documentation that demonstrates that the impacted soil(s) no longer contains a hazardous waste either by treatment or it is below human health risk-based and protection of the environment (through the contaminant migration to groundwater through applicable exposure pathways such as soil leaching) concentrations;
- Documentation that acceptable soil concentrations are achieved either by removal or treatment, and not by dilution; and,
- Documentation that any applicable land disposal restrictions "LDR" have been satisfied.

Figure 1 (Contained-In/Contained-Out Determination Process) illustrates the process used when considering and/or approving a request for a Contained-In/Contained-Out determination.

An application form to request a Contained-In/Contained-Out determination, and an application form to pay for technical oversight costs by the DWMRC associated with the review of the request are both attached for applicants to complete and submit to the DWMRC for processing.

6.0 REFERENCES:

US EPA, Introduction to Land Disposal Restrictions (40 CFR Part 268), Solid Waste and Emergency Response (5305W) EPA 530-K-05-13, Sept. 2005

US EPA, Land Disposal Restrictions: Summary of Requirements, EPA530-R-01-007, August 2001

Federal Register Vol. 63, No. 229 Monday, November 30, 1998 Rules and Regulations, pp 65877

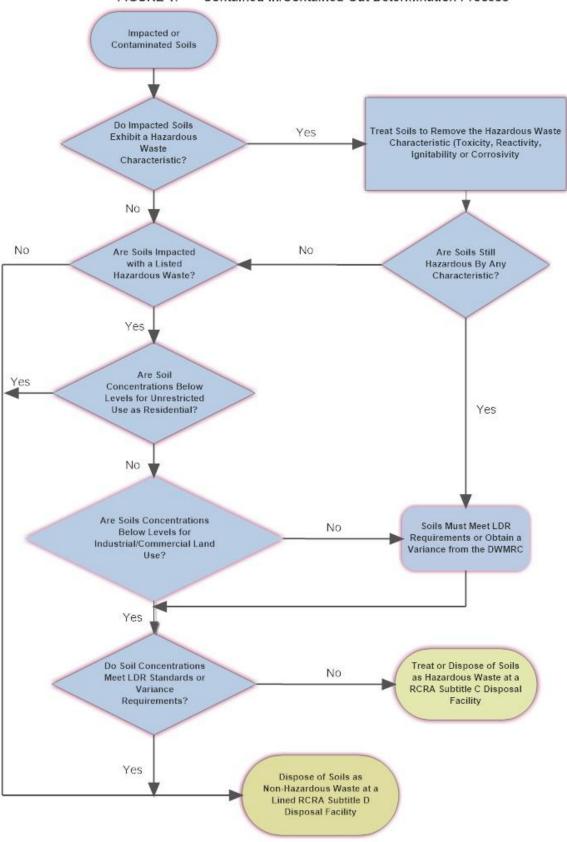
Federal Register Vol. 61, No. 83 Monday, April 29, 1996 Rules and Regulations pp 18795

Hugh Davis, EPA, and Jim Harford, NDEQ. Land Disposal Restrictions Training Slides

ATTACHMENTS

UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY ENVIRONMENTAL CLEANUP PROGRAM

FIGURE 1: Contained-In/Contained-Out Determination Process



UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY ENVIRONMENTAL CLEANUP PROGRAM

Contained-In/Contained-Out Determination Application

RE	: Request for a Contained-I	n/Out Determination for	Soil(s) from:	
SU	JBMITTED BY:		DATE:	
De	ear DWMRC Director,			
re			ination regarding soil from the fo adiation Control within the Utah	
	Site Name: EPA RCRA ID: Street Address: City/Town:			
	Zip Code:	coil to be included in this	 determination:	
	Proposed disposal fac Facility Name:	cility if request for a Conta	ained-Out determination is appro	
	Facility Location:			
Th	e soil contains the following	g listed hazardous waste(s) with waste codes:	
			, which the	
	_		on and Recovery Act (RCRA) by the he soil (check the applicable box)	
	Meets all applicable risk	<-based or cleanup standa	ards upon removal from the site;	or
	Was treated through a standards.	method of treatment oth	er than dilution to meet all the a	pplicable cleanup
[Pi or		flisted hazardous waste cand the applicable stand	onstituents and concentrations e lards used. In addition, if the soil	
ma vo re _l lev	ade through the testing of _ lume of presentative manner as out vels of hazardous material p entification, segregation, an	soil samples. The soil was samples. Ine in Utah Admin. Code present in the soil. The so	s of hazardous waste. These deta to the soil from which the sample led on The so R315-260.10 that adequately de til was also appropriately charact "I have attached documentation and testing of the soil from a Utah	es were taken had a bil was sampled in a emonstrated the terized, including the nof the soil sampling

environmental analytical laboratory that corroborates the above statements. This documentation includes the location and depth of soil samples taken at the project location.

I understand that my request for a Contained-In/Contained-Out determination is subject to a reasonable holding period, during which the determination is subject to review by the DWMRC and that the soil cannot be handled as non-hazardous waste until a determination is made by the DWMRC. In consideration of compliance with the "90 day generator" status for the soils, during this review period, or as soon as possible after the holding period has ended, the Division will notify the applicant as to the status of either issuing an approval or denial of the determination request. Regardless of the final determination by the Division (i.e., approval or denial), the applicant is still required to be in compliance with the 90-day generator status and ultimate disposition of the soil(s).

	understand that if the soil is to be transpor	•								
	mined if the operator of the landfill or othe	•	• , .							
	relevant USEPA region, if the state does not administer the RCRA program) are willing to accept Contained In/Contained-Out determinations proposed to the DWMRC by my firm of									
in/Co	• • •	• •								
In pro	oposing to transport the soils out-of-state, t	ert requesting company name here).	and-Out							
	minations are performed in Utah will be ex									
	e retained by the responsible party and also		accamentation							
	st under penalty of perjury and sign below:	•								
	nformation contained in this submittal, inclu		_							
	(ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information,									
	naterial information contained in this submi	•								
	ate and complete; and, (iii) that I am fully a		•							
	tity legally responsible for this submittal. I a e understand that there are significant pena	•								
	sonment, for willfully submitting false, inac									
	Solid and Hazardous Waste Act.	earate, or meomplete information, merdan	is violating the							
D										
Ву:	Signature	Date								
	Name									
	Company Name									
	company Name									
	Telephone:	Email:								
Subm	nitted on-behalf of:									

Name of Responsible Party or Requesting Entity

UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY ENVIRONMENTAL CLEANUP PROGRAM

Application for Project Oversight

Complete this application to apply for and request technical assistance/review from the Utah Division of Waste Management and Radiation Control (DWMRC). Please note that the applicant is responsible for payment of the Division's staff costs of review and oversight throughout the investigation, cleanup, risk assessment or other applicable site-specific scopes of work as outlined in Utah Admin.code R315-101. Please call (801) 536-0200 should you have any questions about the cleanup program or need assistance with completing this application.

Current Property Owner or Autho			
Owner/Applicant			
Correspondence with DWMRC sh	ould be directed to:		
Contact Person			Title
)email:
Address			
City	Stat	:e	Zip Code
General Site Information:			
Property/Site name			
Address			
City	State		Zip Code
Current Property Value (as assess	ed for property taxes)	\$	Property size (acres)
Property Land Use(s):			
Currently Used For –			
Proposed Use –			
Environmental Site Investigat	ion Report/Results (pl	ease	se attach with application unless previously submitted
Applicant's Objectives (Site Clean	up Levels):		
Primary environmental contamina	ants of concern:		
Current impacts at the site from t	he contamination incl	ude:	<u>.</u> .
Not known at this time (Appli			
		_	s with a Site Management Plan (which may include
			ronmental covenant on the property title, etc.)
			orwithout environmental controls)
			<u> </u>
Billing Information:			
_	ersight for future envi	ronn	imental-related site work should be directed to:
			Title
Organization	Phone ()	email:
Address			
			Zip Code
Authorization to Proceed with D\			
Ву:	Nar	me:_	:
(signature of authorized r	representative)		(print or type)
Date:	Title:		··
Company:			Phone: ()